CLAIMS

We claim:

1. A targeting construct comprising:

(a) a first polynucleotide sequence homologous to a glucocorticoid-induced receptor gene;

(b) a second polynucleotide sequence homologous to the glucocorticoid-induced receptor gene; and

(c) a selectable marker.

2. The targeting construct of claim 1, wherein the targeting construct further comprises a screening marker.

3. A method of producing a targeting construct, the method comprising:

(a) providing a first polynucleotide sequence homologous to a glucocorticoid-induced receptor gene;

(b) providing a second polynucleotide sequence homologous to the glucocorticoid-induced receptor;

(c) providing a selectable marker; and

(d) inserting the first sequence, second sequence, and selectable marker into a vector, to produce the targeting construct.

4. A method of producing a targeting construct, the method comprising:

(a) providing a polynucleotide comprising a first sequence homologous to a first region of a glucocorticoid-induced receptor gene and a second sequence homologous to a second region of a glucocorticoid-induced receptor gene;

(b) inserting a positive selection marker in between the first and second sequences to form the targeting construct.

5. A cell comprising a disruption in a glucocorticoid-induced receptor gene.

6. The cell of claim 5, wherein the cell is a murine cell.

7. The cell of claim 6, wherein the murine cell is an embryonic stem cell.

8. A non-human transgenic animal comprising a disruption in a glucocorticoid-induced receptor gene.

9. A cell derived from the non-human transgenic animal of claim 8.

10. A method of producing a transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene, the method comprising:

(a) introducing the targeting construct of claim 1 into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse.

11. A method of identifying an agent that modulates the expression of a glucocorticoid-induced receptor, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a glucocorticoid-induced receptor gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the expression of glucocorticoid-induced receptor in the non-human transgenic animal is modulated.

12. A method of identifying an agent that modulates the function of a glucocorticoid-induced receptor, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a glucocorticoid-induced receptor gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the function of the disrupted glucocorticoid-induced receptor gene in the non-human transgenic animal is modulated.

13. A method of identifying an agent that modulates the expression of glucocorticoid-induced receptor, the method comprising:

(a) providing a cell comprising a disruption in a glucocorticoid-induced receptor gene;

(b) contacting the cell with an agent; and

(c) determining whether expression of the glucocorticoid-induced receptor is modulated.

14. A method of identifying an agent that modulates the function of a glucocorticoid-induced receptor gene, the method comprising:

(a) providing a cell comprising a disruption in a glucocorticoid-induced receptor gene;

(b) contacting the cell with an agent; and

(c) determining whether the function of the glucocorticoid-induced receptor gene is modulated.

15. The method of claim 13 or claim 14, wherein the cell is derived from the non-human transgenic animal of claim 8.

16. An agent identified by the method of claim 11, claim 12, claim 13, or claim 14.

17. A transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: hyperactivity, reduced anxiety, decreased propensity toward behavioral despair, or decreased propensity toward depression.

18. The transgenic mouse of claim 17, wherein hyperactivity is characterized by an increase in total distance traveled in an open field test, relative to a wild-type mouse.

19. The transgenic mouse of claim 17, wherein hyperactivity is characterized by an increase in the percent of time spent in the central region of the test chamber in an open field test, relative to a wild-type mouse.

20. The transgenic mouse of claim 17, wherein reduced anxiety is characterized by an increase in total distance traveled in an open field test, relative to a wild-type mouse.

21. The transgenic mouse of claim 17, wherein reduced anxiety is characterized by an increase in the percent of time spent in the central region of the test chamber in an open field test, relative to a wild-type mouse.

22. The transgenic mouse of claim 17, wherein the decreased propensity toward behavioral despair is characterized by less time immobile in a tail suspension test relative to a wild-type mouse.

23. The transgenic mouse of claim 17, decreased propensity toward depression is characterized by less time immobile in a tail suspension test relative to a wild-type mouse.

24. A method of producing a transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: hyperactivity, reduced anxiety, a decreased propensity toward behavioral despair, or a decreased propensity toward depression, the method comprising:

(a) introducing a glucocorticoid-induced receptor gene targeting construct into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene.

25. A transgenic mouse produced by the method of claim 24.

26. A cell derived from the transgenic mouse of claim 17 or claim 24.

27. A method of identifying an agent that ameliorates a phenotype associated with a disruption in a glucocorticoid-induced receptor gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene; and

(b) determining whether the agent ameliorates at least one of the following phenotypes: hyperactivity, reduced anxiety, decreased propensity toward behavioral despair, or decreased propensity toward depression.

28. A method of identifying an agent that modulates glucocorticoid-induced receptor expression, the method comprising:

(a) administering an agent to the transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene; and

(b) determining whether the agent modulates glucocorticoid-induced receptor expression in the transgenic mouse, wherein the agent has an effect on at least one of the following behaviors: hyperactivity, anxiety, behavioral despair, or depression.

29. A method of identifying an agent that modulates a behavior associated with a disruption in a glucocorticoid-induced receptor gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene; and

(b) determining whether the agent modulates hyperactivity, anxiety, behavioral despair, or depression.

30. A method of identifying an agent that modulates glucocorticoid-induced receptor gene function, the method comprising:

(a) providing a cell comprising a disruption in a glucocorticoid-induced receptor gene;

(b) contacting the cell with an agent; and

(c) determining whether the agent modulates glucocorticoid-induced receptor gene function, wherein the agent modulates a phenotype associated with a disruption in a glucocorticoid-induced receptor gene.

31. The method of claim 30, wherein the phenotype comprises at least one of the following: hyperactivity, reduced anxiety, decreased propensity toward behavioral despair, or decreased propensity toward depression.

32. An agent identified by the method of claim 27, claim 28, claim 29, or claim 30.

33. A transgenic mouse comprising a disruption in a glucocorticoid-induced receptor gene, wherein the transgenic mouse exhibits hyperactivity, reduced anxiety, a decreased propensity toward behavioral despair, or a decreased propensity toward depression relative to a wild-type mouse.

34. An agonist or antagonist of a glucocorticoid-induced receptor receptor.

35. Phenotypic data associated with the transgenic mouse of claim 17 or claim 25, wherein the data is in a database.